Allowed Materials for Cleaning and Sanitizing

Running a handling and processing operation means keeping your premises and equipment clean and sanitized, and running an organic one means making sure the materials you clean with do not contaminate your product with residues that are not allowed in organic handling. Both objectives are important, and the materials you choose are where they intersect. This article covers the cleaning and sanitizing materials that are allowed in organic handling, how the National List and organizations like OMRI and WSDA help you find them, what to do about restricted materials like chlorine and quaternary ammonia, and the records your certifier will want for the materials you use.

What You'll Learn

- The difference between allowed, restricted, and prohibited cleaning materials
- How to use the National List and OMRI or WSDA to find allowed materials
- How to use chlorine and quaternary ammonia within their organic restrictions
- How to manage water and steam additives that could contact organic product
- How to keep the materials records your certifier requires

Keeping your products safe and keeping them organic are two goals that intersect with the materials you use to clean your facility and equipment. The USDA organic regulations, along with your certifier's own review, determine which cleaners and sanitizers you can use and under what conditions.

DEFINITION

Contamination is the contact of unpackaged organic products with prohibited substances. An example of contamination would be if your product came into contact with a prohibited substance like quaternary ammonia used to sanitize handling equipment.

Prohibited Substance is any substance that is not allowed for use in organic production and handling under the USDA organic regulations. An example would be a synthetic fungicide.[1]

HOW CLEANING FITS INTO ORGANIC CERTIFICATION

Cleaning generally happens in two ways, and each brings its own materials. Physical cleaning removes residue by mechanical means like scraping, sweeping, blowing off with compressed air, or purging, and its main job is preventing commingling on shared equipment. **Physical cleaning** is often followed by **chemical cleaning**, which uses a cleanser, acid, or enzyme and then a sanitizer to finish. Your certifier looks hardest at that last step, the sanitizer, because it is the material most likely to remain on the surface when your organic product arrives. The cleaning methods themselves are covered in their own article, Effective Equipment Cleaning Procedures; here the focus is on the materials.

There are many materials that are commonly used by organic handlers for all types of cleaning and sanitizing. Let's take a look at some of the most common.

Purge Materials

A purge runs material through a machine to clear out the previous nonorganic product from inside the equipment mechanisms.[2] The purge material is usually an organic version of the same ingredient that the machine is designed to process, but it can be any substance that is effective as a purge and allowed for use in organic. Whatever allowable substance is used for purging has mixed with nonorganic substances and must be discarded or sold as nonorganic.

Water and Steam

Water and steam are frequently used for cleaning and rinsing. It is important to consider what additives may be carried in the water and steam that could contaminate your organic product. Potable water is allowed, but the Organic Foods Production Act requires that water used to process human food meet Safe Drinking Water Act standards.[3] If water contacts organic product directly, your certifier may ask for an annual water test, typically for harmful bacteria and sometimes nitrates. Common sources of additives in water or steam include water softeners, defoamers, antimicrobials, and boiler chemicals. Submit all additives that could come in contact with organic product to your certifier for review and approval. Washing produce, carcasses, or eggs are all cases where water contacts organic product directly. The additives in rinse water are a common source of unintended contact with prohibited substances.

LEARN MORE

Water and boiler chemicals are covered in more depth in the article Protecting Organic Products During Processing and Work-in-Progress.

Cleansers and Sanitizers

Cleansers are often essential, and pose a lower risk of contaminating organic product because they are designed to be rinsed off and leave no residue on surfaces.[1] For this reason, there are many allowed options for cleansers used in organic handling and processing.

Sanitizers are where contamination risk increases. Sanitizers are often meant to remain on surfaces, some with a lasting residual antimicrobial effect. Because the substance remains after application, sanitizers are more scrutinized by certifiers. Your certifier will ask for the active ingredient of whatever sanitizer you use at the final step, and use it to decide whether the material is allowed, restricted, or prohibited.[4]

LAST-STEP SANITIZERS

Sanitizers that are intended to be applied to a surface and remain on them without a subsequent rinse with potable water are called last-step sanitizers. Any substance that is used in or on organic processed products must be either nonsynthetic or consistent with the National List of Allowed and Prohibited Substances (National List).[5,6] Many sanitizers are on the National List, which means they can often be used right before organic product contacts the surface, with no rinse needed.

Commonly used sanitizers include:[4]

- Acidified sodium chlorite
- Chlorine materials (calcium hypochlorite, chlorine dioxide, hypochlorous acid, sodium hypochlorite)
- Hydrogen peroxide
- Ozone
- Peracetic/Peroxyacetic acid
- Phosphoric acid
- Potassium hydroxide
- Sodium hydroxide

WATCH OUT

Chlorine is a helpful sanitizer, but it comes with important restrictions.

Chlorine as a Sanitizer

Many handlers use chlorine as a sanitizer, but there are important restrictions to be aware of. As a sanitizer, the USDA organic regulations say chlorine materials may be used for food handling facilities and equipment, up to maximum label rates for disinfecting and sanitizing food contact surfaces.[7,8] **Bleach** is considered a chlorine material, and is very commonly used as a last-step sanitizer in organic operations. Rinsing is not required unless mandated by the label use directions.

When chlorine is used in rinse water for direct food contact (such as produce, egg, or carcass washing), it comes with restrictions. In general, the concentration of chlorine in water must not exceed Safe Drinking Water Act (SDWA) levels. Higher concentrations of chlorine may be used when washing a food product, if doing so is permitted by the U.S. Environmental Protection Agency, but this wash must be followed by a final rinse.[1] The level of chlorine in the final rinse water that comes in contact with organic products must be compliant with the SDWA and must not contain more than 4 ppm chlorine.[7] The procedures used to wash produce and to monitor chlorine levels in the wash water must be included in the OSP.

RESTRICTED SANITIZERS

Some sanitizers that would otherwise be considered a prohibited substance can still be used, but only if a final step removes the residue, usually a rinse with potable water. That final step is called an **intervening event or step**, and a sanitizer that needs one is called **restricted**. A restricted sanitizer may or may not fit your process depending on factors like your workflow and applicable food safety requirements. Using sanitizers that don't require an intervening step can be helpful for efficient workflow.

Common sanitizers that require an intervening step to remove residue include:[4]

- Acetic acid
- Citric products
- Sulfuric acid
- Vinegar
- Alcohol (such as ethyl, isopropyl, and others)

Though an intervening step is often a rinse with potable water, in some cases (like with alcohol sanitizers) complete drying may be adequate.

Quaternary Ammonia

Certain sanitizers are designed to leave persistent antimicrobial residues, the most common of which are quaternary ammonia compounds. While this lasting effect might be a positive in your food safety planning, it is a compliance risk in your organic system.[2,4,9] **Just because something is considered food safe does not mean it is allowed for direct contact with organic products.**

Quaternary ammonia compounds are a prohibited substance under the USDA organic regulations, and therefore organic products cannot come into contact with them. If you wish to use them, your certifier will ask for details in your sanitation plan on how you will remove residue and how you verify residue is removed, which may require testing protocols.

Your certifier is your best source on what testing is required and when, including how sensitive it needs to be and whether an SOP with regular monitoring can stand in for testing every run.

WHERE TO FIND ALLOWED MATERIALS

You do not have to figure out the allowances for every material on your own. Some manufacturers register their cleaners and sanitizers with the Organic Materials Review Institute (OMRI), an independent nonprofit that is ISO 65 accredited by the USDA. Materials on the OMRI list are trusted by the NOP and certifiers (but as always, confirm any materials with your certifier).[10] OMRI has an online search where you can look up a material, plus downloadable lists for brand-name products and for generic materials.[11,12] Both are a good way to check whether a sanitizer's active ingredient is allowed and to learn about any restrictions. Products carrying the OMRI seal appear in the OMRI Products List.

The Washington State Department of Agriculture (WSDA) keeps another widely respected list of pre-reviewed nonorganic ingredients and processing aids.[13] Check whether your certifier accepts the WSDA list.

Certifier Review of Materials

Certifiers need to evaluate the input and how you are using it for compliance. If the input is already OMRI or WSDA-listed, a certificate from them may suffice, but it depends on how the input is being used.

If there is a cleaning/sanitizing material that you want to use that is not OMRI or WSDA-listed, your certifier will likely review it for you. They will need specific documentation from the manufacturer in order to complete their review, which typically includes the product's Safety Data Sheet (SDS) and/or label listing the ingredients and directions for use.

RECORDS REQUIRED FOR CLEANING AND SANITIZING MATERIALS

Your certifier will ask for a list of every substance you use as a handling input, including its composition, source, and where it is used.[14] Most certifiers give you a form for this, and it should cover the cleaners and sanitizers you use on organic equipment, kept current as materials change.

You must also keep records of the sanitizing activities themselves, and review your sanitation plan and how it is verified with your certifier, often through SOPs and your OSP.[14,15] The cleaning logs and purge records that go with these materials are covered alongside the cleaning methods in the article Effective Equipment Cleaning Procedures, and for how to design a recordkeeping system that fits your operation, see Designing a Recordkeeping System for Your Operation. Every cleaner and sanitizer that is used on organic-contact surfaces or contacts organic product directly should be

"For every machine and every opportunity to change over or start a new run of product, there is a cleaning process. And it's very specific and it's documented, and any materials that will be used are vetted and cleared first with our certification specialist and added to our Organic System Plan."

Genevieve Albers
Compliance Manager
Traditional Medicinals

CONCLUSION

Selecting the materials you clean with happens where food safety and organic compliance meet, and most of the work is knowing which ones are allowed, what conditions they come with, and which cannot touch organic product at all. Lean on the National List, OMRI, and WSDA to find them, get materials approved by your certifier before you use them, and keep your materials list current.

ACTION ITEMS

- Catalog all cleaning and sanitizing needed for organic-contact surfaces (like processing equipment) and sanitizers that will have direct contact with organic products.
- Gather materials information (like SDS and labels).
- Review the active ingredients of all sanitizers and consider any possible restrictions.
- Submit a materials list and materials information to your certifier for review.

SOURCES CITED

1. National Center for Appropriate Technology (NCAT). (2012, November). *Guide for Organic Processors*. Retrieved from https://attra.ncat.org/wp-content/uploads/2022/09/nop_processorsguide.pdf
2. USDA National Organic Program, 7 CFR §205.272.
3. U.S. Department of Agriculture, Agricultural Marketing Service. *Organic Foods Production Act of 1990*. Retrieved from https://www.ams.usda.gov/sites/default/files/media/Organic%20Foods%20Production%20Act%20of%201990%20(OFPA).pdf
4. U.S. Department of Agriculture, Agricultural Marketing Service. *Allowed Detergents and Sanitizers for Food Contact Surfaces and Equipment in Organic Operations.* Retrieved from https://www.ams.usda.gov/sites/default/files/media/8%20Cleaners%20and%20Sanitizers%20FINAL%20RGK%20V2.pdf
5. USDA National Organic Program, 7 CFR §205.105(c).
6. USDA National Organic Program, 7 CFR §205.605(b).
7. U.S. Department of Agriculture, Agricultural Marketing Service. (2011, July 22; updated 2024, March 20). *NOP 5026: The Use of Chlorine Materials in Organic Production and Handling.* Retrieved from https://www.ams.usda.gov/sites/default/files/media/5026.pdf
8. USDA National Organic Program, 7 CFR §205.605(b)(12).
9. USDA National Organic Program, 7 CFR §205.105(a).
10. Organic Materials Review Institute. *About OMRI.* Retrieved from https://www.omri.org/about-omri
11. Organic Materials Review Institute. *Lists and Standards.* Retrieved from https://www.omri.org/lists-and-standards
12. Organic Materials Review Institute. *OMRI Product Search.* Retrieved from https://www.omri.org/omri-search
13. Washington State Department of Agriculture. *Input Material Registration.* Retrieved from https://agr.wa.gov/departments/organic/input-material-registration
14. USDA National Organic Program, 7 CFR §205.201(a).
15. USDA National Organic Program, 7 CFR §205.103.

United States Department of Agriculture
Agricultural Marketing Service
National Organic Program